

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: HERZHAFT et al
Serial No.: 10/797,004
Filed: March 11, 2004
For: Method And Device For Analyzing The CO₂
Contained In A Drilling Fluid
Art Unit: 1795
Examiner: Akram, I.
Conf. No.: 3890

REPLY BRIEF

Mail Stop AF
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

November 17, 2008

Sir:

This Reply Brief is being submitted by Appellants under 37 CFR 41.41
in reply to the Examiner's Answer mailed September 16, 2008.

Rejections in the final Office Action are improper and should be
reversed for the reasons set forth in the Appeal Brief filed June 13, 2008.

This Reply Brief addresses the Examiner's "Response to Argument" in
Section (10) in the Examiner's Answer.

On page 7 of the Examiner's Answer, the Examiner incorrectly states
that "Appellant agrees with Examiner that references teach all of the disclosed
limitations of Appellants claims, but argues that no motivation is provided by
the references to combine the references." While it is true that there is no

motivation and no apparent reason to combine the references in the manner urged by the Examiner, Appellants do not agree with the Examiner that the references teach all of the disclosed limitations of Appellants' claims.

The Examiner refers to page 7 of the Appeal Brief which, addresses the claims of 1-3 under 35 U.S.C. 103(a) as being unpatentable over Jones et al. in view of Kelley et al. Claims 1-3 are directed to the method of the present invention for estimating the quantity of CO₂ present in a geologic formation. The method includes a number of steps, including the last recited step of "the quantity CO₂ contained in the geological formation is calculated from the CO₂ measurements." As noted at page 6, lines 3-4 of Appellants' Appeal Brief, the Jones et al. patent does not disclose the step of calculating the quantity of CO₂ contained the geologic formation from the CO₂ measurement. The Kelley et al. patent also does not disclose this step. See, the second full paragraph on page 6 of Appellants' Appeal Brief. In fact, nothing in Kelley would have provided any reason to calculate the quantity of CO₂ contained in a geologic formation from CO₂ measured in a return drilling fluid. See, the last two lines on page 6 of Appellants' Appeal Brief.

Clearly, contrary to the allegation in the Examiner's Answer, Appellants do not agree with the Examiner that the references teach all of the disclosed limitations of Appellants' claims. In addition, as noted in the Appeal Brief, no motivation or any apparent reason is provided by the references to combine the references.

As a reason for one of ordinary skill in the art to have combined the teachings of the references, the Examiner notes on page 8 of the Examiner's

Answer that “[i]t is important to note here that Appellants original specification filed on 3/11/2004 establishes CO₂ measurement in geological formations to be known motivation to determine methods in sampling in situ (see paragraphs 1 and 2 of page 2).” Appellants’ specification, however, is not prior art. Neither is there any admission in Appellants’ specification of the allegation by the Examiner in the Examiner’s Answer.

In the paragraph bridging pages 8 and 9 of the Examiner’s Answer, the Examiner characterizes Appellants’ arguments as alleging that Kelley et al. is not an analogous art. This mischaracterizes Appellants’ arguments. As noted in the second full paragraph on page 7 of Appellants’ Appeal Brief, nothing in the Jones et al. patent or the Kelley et al. patent provides any apparent reason why one of ordinary skill in the art would have provided an additional monitoring function of the drilling mud in Jones et al. to monitor the carbon dioxide level. This is true whether or not Kelley et al. is analogous art.

The Jones et al. patent discloses a method for directly monitoring drilling operations and more particularly drilling fluid and the cuttings to identify changes in the chemical composition of the mud, preferably the ionic composition of drilling muds (filtrate and/or solids) (see column 1, lines 8-20) and to optimize the drilling fluid itself (see abstract “adjustment of the composition of freshly supplied mud”). The resultant data usually along with the analyses of the circulating mud composition are preferably used to indicate appropriate adjustment of the composition of the mud supply to or towards the used to indicate appropriate adjustment of the composition of the mud supply to or towards the optimum as drilling proceed (see abstract). The

Jones et al. patent discloses analysis of a given quantity of return drilling fluid, which is sampled at the surface and transferred to a cell to be analyzed.

The Jones et al. patent is not directed to estimating the quantity of CO₂ in a geologic formation, does not disclose that the CO₂ contained in a geologic formation can be calculated from a CO₂ measurement of the drilling fluid, and discloses no means or device to do so. Nor does the Jones et al. patent disclose adjusting the pH to a value of less than 4 or any means for injecting an acidifying product into the cell.

The Kelley et al. patent is also not directed to geological surveillance through analysis of CO₂ loaded return drilling fluid. Thus, there is no recognition of the correlation between the CO₂ content of a drilling fluid and CO₂ content of a geological formation.

Neither Jones et al. nor Kelley et al. has an objective of geological surveillance. Thus, even assuming, *arguendo*, that there is any motivation to sample in situ, there is no reason to provide analysis method or device of the present invention for geological surveillance, i.e., for estimating the quantity of CO₂ present in a geologic formation.

For the foregoing reasons and the reasons set forth in Appellants' Brief filed June 13, 2008, the rejection of the claims should be reversed.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No.

01-2135 (Case: 612.43540X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

ANTONELLI, TERRY, STOUT & KRAUS, LLP

/Alan E. Schiavelli/

Alan E. Schiavelli

Registration No. 32,087

AES/at
(703) 312-6600